High-Security Encoding Device for Remote Controller

Abstract

The invention illustrates a high-security encoding device for remote controller, comprising: a timer, which is used to provide a transmitting time; a mode selector, which is used to provide a mode select value; a controller, by which an identity, the transmitting time, and the mode select value are received to generate a control signal; a key; an encryptor, which receives the control signal and applies the key to encrypt the control signal into a ciphertext; and a radio-frequency (RF) modulator, which modulates and thereafter outputs the ciphertext. The present invention further illustrates a method to improve the electricity consumption of remote controller, which includes: initiating an encoding device; initiating a timer of the encoding device; encrypting both a transmitting time and the identity of the timer and forward thereof to a decoding device; the decoding device comparing the received data with its own timing; synchronizing the timer of the decoding device and the timer of the encoding device; determining that whether or not the encoding device is again actuated during a period of time; if not, then the timing is stopped while the final timing value is still stored in a memory, if the encoding device is actuated again during the period of time, then repeating the hereinbefore steps until the controlled apparatus is activated.